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Bio-Electrochemical Process Coupled with MnO2 Nanowires for Wastewater Treatment

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Abstract : MnO₂ nanowires were developed as filtration media for wastewater treatment that uniquely combines several advantages. The resulting material demonstrated strong capability to remove the pollution of heavy metal ions and organic contents in water. In addition, the manufacture process of such material is practical and economical. In this work, MnO₂ nanowires were integrated with the state-of-art bio-electrochemical system for wastewater treatment, to overcome problems currently encountered with organic, inorganic, heavy metal, and microbe removal, and to minimize the unit footprint (land/space occupation) at low cost. Results showed that coupling the bio-electrochemical with MnO₂ resulted in very encouraging results with higher removal efficiencies of such pollutants.

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